

DETAILED ACTION

1. This Office Action is in response to Applicant's amendment and response filed on 10/16/2008.

Election/Restrictions

2. Applicant's election without traverse of Group I in the reply filed on 10/16/2008 is acknowledged.
3. Claims 18-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/16/2008.
4. The election of species restriction raised in the Office Action dated 09/16/2008 was not fully addressed in the Applicant's response filed 10/16/2008. In a telephonic interview conducted on 10/24/2008, the Applicant's representative, Nicolas Seckel, further elected to prosecute Species I directed towards a cooling circuit with three-way valves as illustrated in Figure 1. Claims 8, 11 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Claim Objections

5. Claim 1 is objected to because of the following informalities: in Line 3, the phrase "at least one heat-transfer liquid/fluid to be regulated heat exchanger" does not appear to be grammatically complete. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-7, 9-10, 12-13 and 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Regarding base claim 1, the phrase "which is intended to" renders the claim indefinite because it is unclear whether the limitations following the phrase must be carried out in order to meet the claimed limitations.

9. Regarding base claim 1, Lines 7 and 8 introduce "a first heat-transfer liquid / lubricating oil exchanger" and "a second heat-transfer liquid / recirculated exhaust gases exchanger". It is unclear whether these two limitations introduce two of the "at least one heat transfer liquid / fluid" described in Line 3 or if they are meant to describe a heat-transfer liquid to lubricating oil exchanger and a heat-transfer liquid to recirculated exhaust gases exchanger. If the latter observation is correct, it should be noted that the limitation "a second heat-transfer liquid / recirculated exhaust gases exchanger" would be rendered indefinite since a first heat-transfer liquid to recirculated exhaust gases exchanger is not introduced and it is unclear whether there are two of such devices.

10. Specifically regarding claims 7, 10 and 13, the claims recite the limitation "the same signs". There is insufficient antecedent basis for this limitation in the claim.

Additionally, where Applicant acts as his or her own lexicographer to specifically define

a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "signs" in claims 7, 10 and 13 is used by the claim to mean "flow direction with respect to the valve", while the accepted meaning is "mark, symbol or figure." The term is indefinite because the specification does not clearly redefine the term.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Pott

12. Claims 1-2, 5, 9, 12, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Pott (DE 197 50 721 A1). Pott discloses in Figure 3 a cooling circuit for an engine (2) including a oil cooler (6), a radiator (7), a surge tank (9), an EGR cooling device (23), a transmission oil cooler (24) and other check valves (25).

13. Specifically regarding Claim 1, both the oil cooler (6) and transmission oil cooler (24) include parallel paths that bypasses that can be considered as "derivation means from the heat-transfer liquid / oil exchanger".

14. Specifically regarding Claims 2 and 15, a heater (5) is connected to the cooling circuit and can be considered as a "heat sink" and/or heat exchanger for the passenger compartment. Alternatively, the generator (22) can be considered as either a "heat source or heat sink" since it inherently either requires either heating or cooling due to the fact that it is connected to the cooling circuit for temperature regulation.

15. Specifically regarding Claim 5, if the generator (22) is considered as the "heat source or heat sink" and the valve connected to the oil cooler (6) is open, the generator (22), the EGR cooling device (23) and the oil cooler (6) would be connected in series and in the that order with respect to the direction of circulation.

16. Specifically regarding Claim 9, the heater (5) includes a parallel path that bypasses the heater (5) and this branch can be considered as a "derivation means from the heat source or from the heat sink".

17. Specifically regarding Claims 12 and 13, the bypass conduit (3) can be considered as a "derivation means from the engine".

Pfeffinger et al

18. Claims 1-2, 5, 9, 10, 12 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfeffinger et al (U.S. Patent 6,722,715). Pfeffinger et al discloses in Figure 4 an engine cooling circuit (1) comprising a radiator (6), a pump (10), an EGR cooler (13), a heater (14), an electric water pump (15), an engine-oil heat exchanger (16).

19. Specifically regarding Claim 1, Pfeffinger et al discloses Figure 4 an engine-oil heat exchanger bypass line (22) which can be considered as a "derivation means from the heat-transfer liquid/oil exchanger".
20. Specifically regarding Claims 2 and 15, the heater (14) can be considered as a "heat sink" and/or heat exchanger for the passenger compartment.
21. Specifically regarding Claims 9 and 10, the heater (14) includes a bypass line (20) that can be considered as a "derivation means from the heat source or from the heat sink". Alternatively, the radiator (6) can be considered as a "heat sink" and mixing valve (5) which can be considered as a three way valve.
22. Specifically regarding Claim 16, an electric pumps (10, 15) are electrically driven and do not require the running of the engine to be powered. It is known in the art that such coolant pumps in vehicle applications are powered via a battery and thus would inherently be "capable" of circulating coolant even if the engine is off.
23. Specifically regarding Claim 17, as described in Columns 1 and 2, the control valve is actuated as a function of the ambient temperature, driving or engine speed, cooling-water temperature, and temperature of the transmission oil. If the transmission oil is cold, the oil is heated up by the engine-cooling water, if the transmission oil is hot, the transmission oil is passed to the transmission oil-cooler.

Claim Rejections - 35 USC § 103

24. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

25. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Pfeffinger et al and Sause

26. Claims 3, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfeffinger et al (U.S. Patent 6,722,715) as applied to claims 1-2, 5, 9, 12 and 15-17 above, and further in view of Sause (DE 29 27 680).

27. Pfeffinger et al discloses in Figure 4 an engine cooling circuit (1) comprising a radiator (6), a pump (10), an EGR cooler (13), a heater (14), an electric water pump

(15), an engine-oil heat exchanger (16). However, Pfeffinger et al does not a heat storage means which comprise a chemical compound that stores or releases heat.

28. Sause discloses a heat storage device (9) connected to engine (1) that takes heat from the cooling water, exhaust gas or lubricant and chemically stores that heat using $\text{Na}_2\text{SO}_4 \cdot 10 \text{ H}_2\text{O}$. This heat is utilized to raise the temperature of the engine after it has been switched off and assist in preheating. It is well known in the art that preheating or warming up the engine quickly during startup can help reduce emissions (see for example U.S. Publication 2002/0011221, Paragraph [0005]).

29. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply the technique of providing a heat storage device for preheating an engine as taught by Sause, to improve the engine of Pfeffinger et al, for the predictable result of raising the engine's temperature to operating temperature more rapidly during cold starts and reducing emissions (from fuel not being atomized completely in the cold).

30. Specifically regarding Claim 7, Sause discloses providing a three way valve (7) which can be direct the flow of coolant to the cabin heater (6) and/or the heat storage device (9).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ka Chun Leung whose telephone number is (571)272-9963. The examiner can normally be reached on 7:30AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on (571) 272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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